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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/734,856	12/12/2000	Masatsugu Takeuchi	FUJI 18.099	4740

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HELFGOTT & KARAS, P.C.  
Empire State Building, 60th Floor  
New York, NY 10118

EXAMINER

PERILLA, JASON M

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 03/01/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/734,856

Applicant(s)

TAKEUCHI ET AL.

Examiner

Jason M Perilla

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Claims 1-6 are pending in the instant application.

#### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner. However, U.S. application No. 09/322,444 has been stricken and is not considered because it is not in compliance.

#### ***Drawings***

4. Figures 14 and 15 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Specification***

5. The disclosure is objected to because of the following informalities:

Page 4, line 26; The reference to "first symbol S21" of figure 17D is shown as S12 on the drawing.

Page 5, line 24; The reference made to "Fig. 17D" should be changed to --Fig. 18D--.

Page 5, line 27; The reference to "code C3" of figure 18D is shown as C2 on the drawing.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jezo et al (4559606) in view of Shou et al (6212219).

Regarding claim 1, Jezo et al disclose by figure 1 a correlator apparatus comprising a plurality of received-signal registers (4, 5, 6) which receive and store therein a plurality of respective received-signal sequences, at least one code register which stores therein a de-spreading-code sequence (7), a multiplication circuit comprised of exclusive or gates which multiplies the selected one of the received-signal sequences by the de-spreading-code sequence (8, 9, 10), and a summation circuit which obtains a sum of results of the multiplication to obtain a correlation between the selected one of the received-signal sequences and the de-spreading-code sequence (11). Jezo et al does not disclose a selector which selects one of the received signal sequences stored in said received signal registers to be applied to the multiplication circuit. Instead, Jezo discloses by figure 1 that each of the received-signal registers (4, 5, 6) has a separate multiplication circuit (8, 9, 10). However, Shou et al teaches a

correlator apparatus wherein a multiplexor (fig. 13, ref. 3) or selection switch is used to select between a plurality of received-signal registers (fig. 3, ref. 1, 2). One skilled in the art is aptly able to apply the teaching of Shou et al using a switch in a correlator to the apparatus of Jezo et al for the purpose of using fewer multiplication components. One skilled in the art is accustomed to using the least amount of circuitry/power to accomplish a task and hence is able to relate to the use of a switching circuit to select one of the received-signal sequences to apply to a multiplication circuit. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize a switch as taught by Shou et al in the correlation apparatus of Jezo et al because fewer multiplication circuits could be used for a plurality of received-signal registers.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jezo et al (4559606) in view of Shou et al (6212219) and in further view of Struhsaker (5966411).

Regarding claim 2, Jezo et al in view of Shou et al disclose the limitations of claim 1 as provided above. Jezo et al in view of Shou et al do not disclose that correlation apparatus wherein the code register includes a plurality of code registers which store therein a plurality of respective de-spreading-code sequences, and the apparatus further comprising a selector which selects one of said plurality of code registers to select and supply the de-spreading-code sequence to the multiplication circuit. However, Struhsaker teaches by figure 2 a parallel correlation apparatus (22) wherein several de-spreading code sequence registers (110, 112, 114, 116) are available having different de-spreading code sequences (col. 5, lines 5-20). Struhsaker

thus teaches a parallel correlator wherein several reference registers and several received-signal registers are used in parallel. Given the apparatus of Jezo et al in view of Shou et al having "parallel switched" receive-signal registers, it is obvious in view of the correlation apparatus of Struhsaker using a plurality of reference registers that both the plurality of receive-signal and reference registers could be switched about one multiplication and summation circuit to reduce circuit complexity and power requirements. Therefore, it would have been obvious for one having ordinary skill in the art at the time which the invention was made to utilize a switched plurality of reference registers as taught by Struhsaker in the correlation apparatus of Jezo et al in view of Shou et al when the teachings of Struhsaker are taken in view of the apparatus of Jezo et al in view of Shou et al because the plurality of switched reference registers could be used to make correlations against the plurality of switched receive-registers with the use of only one multiplication and summation circuit to save on the design complexity and power requirements.

***Allowable Subject Matter***

9. Claims 3-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art not relied upon above is cited to further show the state of the art with respect to parallel correlators.

U.S. Pat. No. 3670151 to Lindsay et al; Correlators using shift registers.

U.S. Pat. No. 5528624 to Kaku et al; Parallel operative correlators.

U.S. Pat. No. 4660164 to Leibowitz; Multiplexed correlator.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Perilla whose telephone number is (703) 305-0374. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Chin can be reached on (703) 305-4714. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.



Jason M Perilla  
January 23, 2004

jmp



**STEPHEN CHIN**  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600